FLORISSANT SEMINAR SERIES 2003

The seminar series at Florissant provides participants with an opportunity for field-based experiential learning in the natural university that the Monument and the Pikes Peak region offers. A mostly brand-new slate of offerings this season expands our exploration of the natural and cultural resource themes that have been emphasized in past years. Instructors are recognized experts in their fields; classes are small and costs are low to ensure accessibility, interaction, and participation. The Friends of Florissant Fossil Beds sponsor the series and all proceeds assist the National Park Service in protecting the world-class fossils and educating the public about their significance. Browse the new catalog and join us in one or many classes for a fun-filled learning adventure.

ADAMS STATE COLLEGE

Our association with Adams State College, Division of Extended Studies in Alamosa, Colorado, is entering the third year. Through this program we offer graduate credit for teachers attending our seminar series. Courses in sciences, history and humanities allow teachers to earn ½ credit per 7.5 hour class. The tuition cost for each ASC class is $20.00. BOCES recertification is now offered through the Pikes Peak chapter in Colorado Springs for a cost of $5.00 per ½ credit.

COST AND REGISTRATION

FRIENDS FEES: **$35.00** - Regular fee for each seminar
$25.00 - Fee for current members of Friends of the Florissant Fossil Beds
$20.00 - Fee for teachers who are current members of Friends taking class for graduate credit

SEPARATE ADDITIONAL FEES FOR TEACHERS SEEKING EITHER CREDIT BELOW:

$20.00 Adams State College, Extended Studies graduate credit for teachers
$ 5.00 BOCES Teacher recertification:

Seminars fill quickly and some classes have size limits so we recommend signing up early. You may join the Friends at time of registration and take the discounted fee (see Friends membership form). Please complete the registration form provided and return it with full payment. If you are taking the course for credit through Adams State College, Extended Studies call the Monument for a packet, which will include a separate registration form for ASC. Adams State College tuition or BOCES recertification cost must be included with seminar registration. Please make checks for all fees payable to “Friends of Florissant Fossil Beds”. We regret that we cannot accept credit cards in payment.

REFUND/CANCELLATION POLICY

The monument reserves the right to cancel any seminar for insufficient enrollment, and will make every effort to place participants in another seminar of their choice or will return the Friends registration fees and tuition. If you cancel your enrollment for any reason, the following policy will apply: refunds will be given for cancellations received up to one week prior to the seminar, minus a $5.00 processing fee; no refunds are

given for cancellations less than a week prior to the seminar.

WHAT WE'LL SEND: HOW TO GET HERE: WHAT YOU'LL NEED TO BRING

Upon receipt of your registration materials and full payment, and prior to the seminar, we will send a syllabus (for-credit participants) and any pre-seminar handouts or additional information about the class. All seminars begin at the Fowler Education center at 9 am and end at 5 pm unless otherwise noted. **Specifically: The Hayman fire; Geology of South Park; Birds of Florissant; Astronomy: A Cosmic Journey.** Allow approximately one-hour drive time from Colorado Springs, two hours from Denver. Most seminars will be outdoors for a large portion of the class and may require hiking. Be prepared for changeable mountain weather with layered clothing; rain gear, hiking shoes, hat, sunglasses and sunscreen. Meals are not provided, so bring a sack lunch, snacks and ample drinking water. Bring a notebook and pencil or pen.

S E M I N A R S

PALEONTOLOGY AND GEOLOGIC HISTORY OF FLORISSANT (1/2 credit) June 7th, 9 am to 5 pm, Herb Meyer, PhD - Please note: Both basic and advanced topics will be discussed. The seminar is most suitable for science teachers or people with an interest in geology.
We will investigate the geologic events that shaped the formation of the fossil-rich Florissant Formation. Basic concepts of geology relating to Florissant are examined, including rock types, volcanoes, dating, and plate tectonics. The geologic processes responsible for the formation of the fossil beds will be examined in detail, including an overview of regional geologic history through the past 1.4 billion years, types of fossilization, the relation of the fossil beds to the Guffey volcanic center, and sedimentation patterns in the ancient lake. The paleontology of the fossil beds will be discussed, including the types of plants and insects that were present, the use of fossils in reconstructing climate and elevation, and the preservation of fossils in collections. A 2-hour field trip will examine geologic outcrops and features.

THE FUNDAMENTALS OF ASTRONOMY: A COSMIC JOURNEY THROUGH SPACE AND TIME (1/2 credit) June 21st, 2 pm to 10 pm (Please not the later time for night skies viewing), William A. Dexter, PhD – There are no mathematical requirements for taking this class. We will trace the evolution of the universe from the Big Bang to the present. The class will examine the nature of stars, galaxies, quasars, black holes and even other planetary systems! Discover how we know what we know about these objects; there will be discussions about distance techniques, electromagnetic radiation, and various methods for observing and measuring stellar positions, as well as the use of a telescope. We will also view many deep space photographs of galaxies, clusters and nebulae. If the sky is clear that night, we will see stars first-hand by telescope.

BASIC MAMMAL TRACKING: INTRODUCTION TO THE SCIENCE OF WILDLIFE TRACKING (1/2 credit), June 28th, 9 am to 5 pm, Lee Thormahlen, Naturalist – Many people walk or hike outdoors without ever seeing the signs of wildlife that are all around them. Lee Thormahlen will provide an overview of the remarkable science and world of wildlife tracking. The evolution of the foot, gaits and track patterns, measurements, clue identification, techniques, fieldwork, introduction to snow tracking and other subjects will be discussed. The morning portion of the class will be instruction with a PowerPoint presentation; the afternoon a field trip in the surrounding area of the Fossil Beds National Monument applying and practicing techniques learned: Learning to respect the rights of wildlife will also be addressed. Here's an opportunity to sharpen your senses and learn the skills necessary to interpret signs left behind by wild animals.

BIRDS OF FLORISSANT FOSSIL BEDS NATIONAL MONUMENT: IDENTIFICATION AND HABITATS (1/2 credit), June 29th (Sunday), 7 am to 3 pm, Richard Beidleman, PhD

and Linda Beidleman, MA (Note early starting time: The class begins promptly at 7 am to be in the field when birds are most active. Please arrange to arrive at least a few minutes early) – Birding is the fastest-growing natural history pursuit in the world, and this seminar will be useful to every level of interest. Participants will gain experience in spotting and identifying birds using binoculars, telescopes, field books and instructor suggestions. The basics of bird identification include features common to all birds, noting characteristics such as family groups whose shapes provide clues to specific species. Markings, colors, behavior, song and habitat give additional clues for recognition. Bring binoculars if you have them, a field notebook and pencil. You will receive a list of recommended field guides prior to the class.

GEOLOGIC WONDERS OF SOUTH PARK: THE FIELD TRIP (1/2 credit), July 5th, 9 am to 5 pm, Donald McGookey, PhD – Assuming that participants are non-geologists, this field trip provides an on-the-scene introduction to the geology of the eastern portion of South Park. The day will begin at the Fowler Education Center at the monument. Participants will proceed (by van or car-pool) to the new Wilkerson Pass Visitor Center overlooking South Park for a literal overview of many of the dramatic features of this fascinating geologic, paleontologic, and historic Colorado locale. The group will see extrusive rocks from what was once the massive Guffey Volcano; mudflows with spectacular volcanic bombs, welded ash flows and lava flows. The class will traverse a variety of geology throughout the day in the area of Hartsel and along Elkhorn Road, examining marine and non-marine strata, the leading edge of the Elkhorn Thrust; Precambrian metamorphic and igneous rocks, Oligocene lakebeds with insect fossils, coal beds and volcanic strata. Some roads are unpaved, but all are easily driven by automobile. Don't be daunted by the geologic terms; a glossary explaining in simple language those used will be sent prior to the class. If you've always wanted to learn about geology from the rocks themselves (and the man who wrote the recently released book on the area), this field trip will do it!

LITHICS: UNDERSTANDING FLINTKNAPPING AND INDIAN USES OF STONE TOOLS (1/2 credit), July 12th, 9 am to 5 pm, Bob Patten, BS – The sensitive balance between environment, game and people steered early lithic (stone) technology. Follow the life cycle of a rock from quarry, through the camp, and back to the ground. Demonstrations will show how flintknapping processes created predictable and uniform tools, use of the atl-atl or spear thrower that extended range and power of hunting weapons dramatically, and other original tools and processes. The class will offer hands-on experience that can create appreciation of the role stone tools played in day-to-day activity both for early man and historic peoples. Bob Patten observes that deep insight and understanding occurs for many people from reflections of ancient tools and projectile points. Patten participated in NOVA's "The Search for the First Americans", including his replicating a Clovis point. Join this author and master flintknapper for an inspiring learning experience.

READING AND WRITING THE WESTERN LANDSCAPE (1/2 credit), July 19th, 9 am to 5 pm, Susan J. Tweit, BS – The landscapes of the western United States are uniquely legible, like a book laid open for all to read. The details of these landscapes reveal the poetry and power inherent in them. Their stories have much to tell us about what life really means. Learning how to read these landscapes and how to write their stories passionately and precisely can give us insight into our own species, helping us understand what it is to be human. In this seminar, we'll observe, take field notes, use field guides and other references to understand our observations and uncover stories through creative writing exercises. Participants will need a notebook or sketchbook suitable for field notes, and to be prepared to write. Susan Tweit is a former field ecologist and is currently a writer whose work has earned numerous national and regional awards.

HISTORY OF DISCOVERY AND SCIENTIFIC RESEARCH AT THE MONUMENT (1/2 credit), July 26th, 9 am to 5 pm, Steven Veatch, MS – Join local geologist Steven Veatch and learn the amazing stories of early exploration and scientific discovery in the monument. This window to the past will center on the lives and contributions of people whose work has increased our understanding of the Eocene ecosystem represented in the Florissant fossil record. An

introductory discussion illustrated with rare historical photographs and slides will precede visits to actual historical paleontological sites in the park. Included will be fascinating new information about the Princeton Scientific Expedition of 1877 (a group of remarkable young men whose individual journals allow us to see through their eyes); Mrs. Charlotte Hill (The significance of whose role no one suspected), and others. Both famous and little-known scientists, the historical and cultural components of their places within the scientific record of the monument will be covered, much of the new material is the result of recent and original research done by the instructor, Steven Veatch. Here's a seminar that will give you a chance to experience first-hand where history was made!

PRIMITIVE SKILLS: UTE BASKETRY AND OTHER ARTS OF SURVIVAL (1/2 credit), August 2nd, 9 am to 5 pm, Robin Blankenship, BS – The Ute Indians moved through the area of the Fossil Beds on their annual treks to obtain a living from the land itself. They and other nomadic peoples used materials at hand to make utilitarian objects, in addition to other earth-based survival skills involved in hunting and gathering societies. Learn to identify plant resources for basketry, techniques for whole shoot willow twining to make a variety of baskets, and the uses for which they might be intended. Various start and finish techniques will be taught. Other survival arts and skills will be discussed by instructor Robin Blankenship, whose focus covers a wide range of knowledge that is eons old and is quickly becoming lost as we trade "up" in technology. Materials will be provided and you will take the items made home to enjoy and learn from further.

ROCKS & MINERALS (1/2 credit), August 9th, 9 am to 5 pm, Peter (Pete) J. Modreski, PhD – How do you identify a rock? This class will answer this and many questions about the basics of rocks and minerals, keyed to the rocks found in the Florissant-Lake George area. Half the day will be spent examining samples of igneous, metamorphic, and sedimentary rocks and the minerals of which they're composed. The other half on a short field trip to see and (if desired) collect some of these rocks in person at roadside sites and on one or more short hikes or walks. Participants will get to be on familiar terms with many types of rocks and their relatives, and learn how they fit into the big geologic picture of Colorado.

THE HAYMAN FIRE AT MANITOU EXPERIMENTAL FOREST: Fire Behavior, Effects and Subsequent Research (1/2 credit), August 16th, 9 am to 5 pm, Wayne D. Shepperd, PhD On June 18th, 2002, the 135,000 acre Hayman Fire burned about 1000 acres of the 16,700 acre Manitou Experimental Forest a few miles north of Woodland Park, Colorado. Workshop participants will meet at the historic Manitou Experimental Headquarters Lodge to learn fundamentals of the ecology and fire history of the ponderosa pine forests in this area. We will visit an area where fire behavior was modified by management activities underway at the time of the fire; tour experimental sites where effects of fuel reduction techniques are being studied. In addition, the class will visit former regeneration study plots burned by the fire to observe effects of different fire intensities where pre-fire forest conditions are precisely known. Here's a chance to hear what the real experts have learned about this devastating fire that occurred virtually in our own backyard. Participants aren't required to have extensive scientific knowledge, only an interest in fire and ponderosa pine ecology. Bring a notebook. Those registered will be sent directions to the Manitou Experimental Headquarters Lodge.

LIMNOLOGY: WATER, STREAMS AND PONDS IN THE MONUMENT (1/2 credit), August 23rd, 9 am to 5 pm, Steven Veatch, MS – Water is a complex, increasingly crucial and little-understood issue today in the west. To know the cycle of water is a beginning. Limnology is the science of inland waters including streams, lakes, ponds and wetlands. An introductory slide presentation will be followed by a field trip to several streams and ponds on the monument. Topics include groundwater, springs, aquifers, riparian zones, human impact on water, and conservation. Water properties, cycles, and use, Colorado pollution problems will also be examined. In the afternoon the group will visit Grape Creek near the Hornbek Homestead to carry out field observations, gain practical experience in limnological methods and practice selected

stream and pond water quality measurements. Whether you're interested in the scientific methods or just want to understand more about this precious and much-debated resource, you'll never see water in quite the same way as before.

ABOUT THE INSTRUCTORS

LINDA BEIDLEMAN, MA, obtained her Masters degree in Biology from Rice University. She is co-author of *Plants of the San Francisco Bay Region, Plants of Rocky Mountain National Park*, and the *Annotated Bibliography of Colorado Vertebrate Zoology.* Linda has worked with the California Native Plant Society and taught bird and/or botany short courses at Aspen Center for Environmental Studies, Colorado College, the University of California, Berkeley, as well as Rocky Mountain National Park. With Dr. Beidleman, she has co-authored a number of winter bird-population studies.

RICHARD BEIDLEMAN, PhD, an ecologist with a PhD from the University of Colorado has taught on the faculty at CSU, University of Colorado, and Colorado College, where he is now Professor Emeritus (Biology). He is currently a Research Associate at the University of California Herbarium (Berkeley) and an instructor of field courses at University of California, Aspen Center for Environmental Studies, and Rocky Mountain National Park. Dr. Beidleman has authored numerous publications including many on ecology, zoology, and American frontier naturalists, as well as co-authored *Plants of Rocky Mountain National Park* and *Annotated Bibliography of Colorado Vertebrate Zoology.*

ROBIN BLANKENSHIP, BS in Education, also holds a BA in English and Spanish, both from the University of Colorado. As the owner and operator of EARTH KNACK, Stone Age Skills for the 21st Century, she has been offering primitive living skills courses and wilderness treks since 1990. Robin has been working in the outdoor field since 1978 when she began leading horse-packing trips into the Collegiate Peaks for Unlimited Ranch in Buena Vista, Colorado, later directing their mountaineering program. She began teaching for Larry Dean Olsen's School of Urban and Wilderness Survival in 1984, and has taught in the National Outdoor Leadership School, Four Corners Outdoors School, and Outward Bound. Robin has taught in a number of venues, including (Adjust Faculty) Prescott College, Prescott, AZ. She has published articles in various magazines and journals and has been featured by the Today Show on NBC, Outside Magazine, The New York Times, Chicago Tribune, Denver Post, and Spirit of Colorado. Robin holds a Colorado teaching credential in elementary education.

WILLIAM A. "BILL" DEXTER, PhD, earned his Doctorate in Astrophysics in Minnesota, an MS in Earth Sciences from Ohio State, and a BS in Biological Sciences from Ohio State. Dexter is a former college professor retired from Richland College and the University of Texas at Dallas. He has taught astronomy, earth and physical sciences at nine colleges and universities; has written five textbooks and over fifty scientific publications. The William A. Dexter Astronomical Observatory was dedicated in 1976 at Dallas, Texas. Dexter served as seasonal paleontologist at the Monument; is past president and currently an active board member for the Friends of the Florissant Fossil Beds National Monument.

DONALD P. McGOOKEY, PhD, earned a Bachelor's degree from Bowling Green State University, a Masters from the University of Wyoming, and a PhD at The Ohio State University. His career encompassed employment for Texaco, Inc, with assignments in the Rocky Mountains and in New York (International Exploration) and as Chief Geologist in Houston Texas. He is currently an independent geologist. Don's interest in South Park stems from his family having owned property there for many years, with much of the geologic column visible from their cabin. He has lectured locally on lode and placer gold, glaciation, and the Guffey Volcano, and has authored a recently released book *Geologic Wonders of South Park, Colorado, with Road Logs,* which is the basis for his seminar.

HERBERT W. MEYER, PhD, is the paleontologist at Florissant Fossil beds National Monument. Meyer surveys Florissant fossil collections at major museums to develop a paleontological database website, publishes research articles and books, and oversees paleontological resource management. His PhD was earned from the University of California, Berkeley as were MA and AB (Honors) degrees in Paleontology. He is the author of a recently released, *The Fossils of Florissant*, Smithsonian Books. Meyer leads field trips for scientific societies and serves as paleobotanical specialist for other agencies and for international conservation in Peru and China.

PETER (PETE) MODRESKI, PhD, is responsible for Geologic Outreach and Education with the U.S. Geological Survey, Denver, Colorado. He has taught Continuing Education classes on geology, dinosaurs, and rocks and minerals for the Colorado School of Mines, and is a volunteer for the Friends of Dinosaur ridge and the Denver Museum of Nature and Science. Pete is the co-author of *Minerals of Colorado* published in 1997. He has taught seminars at the Florissant for three years.

BOB PATTEN, BS, Bob Patten earned a BS in civil engineering from CSU in Fort Collins, Colorado. He worked for the USGS in their topographic mapping program for thirty-four years before retiring. His love is lithics technology, in which field he has worked and collaborated with most of the major Paleo-Indian archaeologists in the country, often helping to puzzle out ancient technological secrets. His concentration has always been on Paleo-Indian lithic technology; however, his scope of interest and experience spans the world—for all times. Patten replicates Paleo-Indian projectiles using original tools and processes. His book *Old Tools – New Eyes* is a primal primer detailing the craft and technology of flintknapping. His forthcoming book *Peoples of the Flute: A study in Anthropolithic Forensics* will show

why early people made the technological decisions that they did.

WAYNE D. SHEPPERD, PhD, is a Research Silviculturalist at the U.S. Forest Service Rocky Mountain Research Station in Fort Collins, Colorado. He is also administrator of the Manitou Experimental Forest near Woodland Park, Colorado. He holds a BS in Outdoor Recreation, and MS and PhD degrees in Silviculture from Colorado State University. A Colorado native, Dr. Shepperd has been with the Forest Service since 1969. The author of over 70 research publications, he is a recognized expert of the ecology, growth, and management of Rocky Mountain Forests. His current research includes fire, fuels, vegetation and management studies in the Colorado Front Range, North Kaibab Plateau in Arizona, and the Black Hills of South Dakota.

LEE THORMAHLEN, Naturalist - Lee attended Portland Community College, Portland State College, Metropolitan State College, Red Rocks Community College and the University of Durham in Durham, England. His primary interests are in wildlife tracking, observation and education. He served as a volunteer Naturalist for 5 years at Roxborough State Park, and completed the Division of Wildlife's Watchable Wildlife training course where he currently serves as a training instructor. Thormahlen coordinates wildlife management and training programs for the Cherokee Ranch and Castle Rock Foundation in Sedalia, Colorado. He has completed six professional tracking classes and studied under Dr. James Halfpenny for six years. He serves as a part-time tracking assistant for Dr. Halfpenny. He has completed a number of field classes and home study courses from Wilderness Awareness Schools in Duval, WA. Professionally, Thormahlen worked for the US Department of the Interior as a Cartographer with the Bureau of Land Management. He is currently with the DOI Minerals Management Service where he serves as Chief of the Mapping and Boundary Branch.

SUSAN J. TWEIT, BS, Susan Tweit earned a BS with honors, botany and photography from Southern Illinois University, and did graduate work in vegetation ecology and writing at the University of Wyoming. A field ecologist turned author and columnist, Susan Tweit's seven books about the wild nearby in the American West have earned national and regional awards. Her articles, essays and commentaries have been featured in venues as diverse *Audubon* magazine, The Denver Post, and *Cricket*, the magazine for children. She teaches creative writing and natural history workshops around the country, mentors individual writers, and is currently finishing writing her first mystery novel and researching a gardening handbook.

STEVEN WADE VEATCH, MS received an MS in Earth Science from Emporia State University, an MA from Webster University, St. Louis, Missouri, and a BS from the University of Southern Colorado. His special interests include geologic processes operating at the surface, paleontology and Colorado archaeology. Steve conducts geoscience seminars for the Florissant Fossil Beds National Monument and the Cripple Creek Park and Recreation Department. He is a member of the Colorado Springs Mineralogical Society, Colorado Scientific Society, Colorado Archaeological Society, Western Interior Paleontological Society, The National Association of Geoscience Teachers, and the Geological Society of America.

Friends of the Florissant Fossil Beds, Inc.

Florissant Fossil Beds National Monument

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MEMBERSHIP CATEGORIES

Individual	$ 15.00
Individual (2 Year)	27.00
Family	25.00
Family (2 Year)	40.00
Corp/Business	100.00
Lifetime (Old Fossil)	300.00
Contribution	_____
Total	_____

Name_____

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City_____State_____ Zip_____

Phone_____

The fees for each Seminar are $35.00 per person; and $25.00 per person for current members of the Friends group. Fee for current teacher members if taking for ADAMS STATE credit is $20.00.

Name_____ Phone _____(H)

Address_____ Phone _____(W)

City_____ State _____ Zip _____

REGISTRATION FORM FOR SEMINARS

Teacher graduate credits are $20.00 for ½ credit (7.5 hour)

Course Number	Seminar Title	Seminar Fee	Adams State Tuition $20.00/per class	BOCES $5.00	Total Amount this seminar
ED 589					
ED 589					
ED 589					

ED 589
ED 589
ED 589

Membership Dues

Subtotal

Total